CLAIMS:

1. A process of treating a human or non-human animal cell to introduce heterologous genetic material into said cell and express said material in said cell, comprising the steps of (a) providing a recombinant herpesviral vector which is an attenuated or replication-defective and non-transforming mutant herpesvirus, and which carries heterologous genetic material, and (b) transducing human or non-human animal cells selected from: hemopoietic cells, malignant cells related to blood cells, and malignant or non-malignant CD34+ cells; by contacting said cells with said virus vector to transduce said cells and express said genetic material.

2. A process according to claim 1, wherein the heterologous genetic material comprises a gene encoding an immunomodulatory protein or other gene product useful in tumor therapy, immunotherapy or gene therapy.

3. A process according to claim 1 wherein said human or non-human animal cells are selected from: cells that (prior to transduction) have not been incubated at all under cell culture conditions, cells that have not been thus incubated for more than about 2 hours, cells that have not been thus incubated for more than about 4 hours, and cells that have not been thus incubated as long as overnight, e.g. freshly-sampled tumor cells.

4. A process according to claim 1 wherein the resulting transduced cells are subjected to a further step selected from (a) reinfusion of said cells into the subject from whom the parent cells were obtained, and (b) reaction of said cells with leukocytes in vitro.

5. A process according to claim 1 wherein said human or non-human animal cells are treated ex-vivo and wherein said transduction is carried out with an efficiency of at least 42%.

6. A process according to claim 1 wherein said human or non-human animal cells are treated ex-vivo and wherein said transduction is carried out with an

efficiency of at least 65%.

7. A process according to claim 1 wherein said human or non-human animal cells are treated ex-vivo and wherein said transduction is carried out with an efficiency of more than 80%.

8. A process according to claim 1 wherein said human or non-human animal cells are treated ex-vivo and said transduction step (b) is carried out at a multiplicity of infection (MOI) of from 0.05 to 20.

9. A process according to claim 1, wherein said replication defective mutant virus is a mutant virus whose genome is defective in respect of a gene essential for the production of infectious virus, such that said gene has been deleted and the virus can infect normal host cells and undergo replication and expression of viral genes in such cells but cannot produce infectious virus.

10. A process according to claim 9, wherein said gene that is essential for the production of infectious virus has been deleted and and said gene encoding a heterologous protein is inserted into the genome of the mutant virus at the locus of the deleted essential gene.

11. A process according to claim 1 wherein said viral vector is a mutant of HSV.

12. A process according to claim 1, for treating a human or non-human animal cell to introduce a heterologous gene into said cell to render said cell more highly immunogenic, comprising the steps of (a) providing a recombinant herpesviral vector which is an attenuated or replication-defective and non-transforming mutant herpesvirus, and which carries heterologous genetic material comprising a gene encoding a immunomodulatory protein selected from cytokines and immunological co-stimulatory molecules and chemo-attractants, and (b) transducing human or non-human animal cells selected from: malignant cells related to blood cells, hemopoietic cells, malignant or non-malignant CD34+ cells, by contacting said cells with said virus vector to transduce said cells and

render said cells more highly immunogenic.

13. A process according to claim 1, wherein the viral vector encodes a gene encoding a heterologous immunomodulatory protein selected from cytokines, immunological co-stimulatory molecules, and immunological chemo-attractants.

14. A process according to claim 1, wherein the viral vector used to transduce said cells is a vector encoding a cytokine selected from GMCSF, IL2, IL12, CD40L, B7.1 and lymphotactin.

15. A process for activating and/or expanding cytotoxic T cells, which comprises exposing T cells to cells which have been transduced by a process according to claim 1.

16. A process according to claim 15, wherein the transduced cells are malignant cells.

17. A pharmaceutical composition for use in transducing human or non-human animal cells selected from: hemopoietic cells; malignant cells related to blood cells; and malignant or non- malignant CD34+ cells; comprising a recombinant herpesviral vector which is an attenuated or replication-defective and non-transforming mutant herpesvirus, and which carries heterologous genetic material e.g. a gene encoding a heterologous protein.

18. A pharmaceutical preparation comprising human or non-human animal cells selected from: hemopoietic cells; malignant cells related to blood cells; and malignant or non- malignant CD34+ cells; said cells having been infected with a recombinant herpesviral vector which is an attenuated or replication-defective and non-transforming mutant herpesvirus, and which carries heterologous genetic material, e.g. a gene encoding a heterologous protein.

19. A process of treating a subject which is a human subject or a non-human animal subject in order to achieve expression of a foreign gene in vivo, comprising administering to said subject a pharmaceutical composition according

to claim 17 or to claim 18.

20. A process of treating a subject which is a human subject or a non-human animal subject in order to elicit an immune response, which comprises administering to said subject a pharmaceutical composition according to claim 18.